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February 27, 2003

Mary L. Cottrell, Secretary
Department of Telecommunications and Energy
One South Station, 2nd Floor
Boston, MA 02110

RE: Commonwealth Electric Company d/b/a/ NSTAR Electric, D.T.E. 03-17

Dear Ms. Cottrell:

Enclosed please find the Annual Service Quality Report (the "SQ Report") for Commonwealth Electric Company d/b/a/ NSTAR Electric Company ("ComElectric" or the "Company"). The SQ Report sets forth the Company's performance results for the year ending December 31, 2002, under the service quality plan (the "SQ Plan") that was approved for the Company by the Department of Telecommunications and Energy (the "Department") on December 5, 2001.

In 2002, the Company met or exceeded all of the established performance benchmarks, and therefore, ended the year in a net offset position. NSTAR Electric looks forward to continued success in 2003.

Should you have any questions or need additional information, please do not hesitate to contact me. Any communications should also be directed to:

Robert J. Keegan
Cheryl M. Kimball
Keegan, Werlin & Pabian, LLP
21 Custom House Street
Boston, MA 02110
TEL: (617) 951-1400

Thank you for your time and attention to this matter.

Sincerely,

Mark Reed

DTE 03-17

Commonwealth Electric Company

Annual Service Quality Report

SECTION ONE

Year Ending December 31, 2002

DTE FORM - B



FORM B (Electric Companies)

Commonwealth Electric Company

28-Feb-03

PENALTY PROVISIONS	Years in Database	Mean and Benchmark	Performance in 2002	Comments
Telephone Answering Factor (%)	5	64.68% (+/- 4.29%)	80.24%	Telephone statistic based on Calls Handled within 30 Seconds.
Emergency Answering (%)	NA	NA	85.94%	Tracking emergency calls started in 2002.
Non-Emergency Answering (%)	NA	NA	78.82%	Tracking non-emergency calls started in 2002.
Service Appointments Kept (%)	0	NA	100.00%	Tracking service appointments started in 2002.
Meter Reads (%)	5	98.66% (+/- 1.00%)	99.38%	
Consumer Division Cases (Cases/1000 customers)	10	1.116 (+/- 0.227)	1.015	
Bill Adjustments (\$/1000 customers)	10	\$37.27 (+/- \$40.43)	\$53.03	
SAIFI	5	1.323 (+/- 0.225)	1.002	
SAIDI	5	129.85 (+/- 28.09)	83.43	
Lost Time Accident Rate (# of acc/200,000 employee hours worked)	10	2.63 (+/- 0.80)	1.22	

FORM B (Electric Companies)

Commonwealth Electric Company

28-Feb-03

ADDITIONAL REPORTING	Years in Database	Mean and Benchmark	Performance in 2002	Comments
Staffing Levels		Union 477 6 Management 250	Union 2324 Management 889	
Restricted Work Day Rate (# of acc/200,000 employee hours worked)	10	2.33	2.72	
Property Damage > \$50K (#)	1	NA	0	
Line Loss	10	5.5%	5.7%	Performance in 2002 is estimated pending filing of FERC FORM 1
Capital Expenditures (# of projects and total \$)	10	\$25,807,100	101 \$33,777,000	
Spare Component & Inventory Policy	NA	NA	NA	
Customer Surveys (scale 1-7):				
Random (Overall Customer Satisfaction Survey)	1	NA	84.8%	
Callers (Post-Transaction Survey)	1	NA	85.9%	
Customer Service Guarantees (#; total \$)				
# of Payouts	1	NA	1	
\$ of Payouts	1	NA	\$25	

DTE 03-17

Commonwealth Electric Company

**Annual Service Quality Plan
Performance Report**

SECTION TWO

Year Ending December 31, 2002

Historical Performance Data



SECTION 2

Commonwealth Electric Company Performance Review for Year Ending December 31, 2002

I. Introduction

On December 5, 2001, the Department of Telecommunications and Energy (the “Department”) approved a Service Quality Plan (the “SQ Plan”) for Commonwealth Electric Company d/b/a/ NSTAR Electric (“Commonwealth,” or the “Company”). In accordance with the terms of the SQ Plan, Commonwealth filed its first annual service-quality report on March 1, 2002. That filing established the benchmarks (using data through 2001) against which performance in the 2002 calendar-year period would be measured. In this section (Section 2) of the filing, the Company reviews: (1) the historical data underlying those benchmarks; (2) the performance results for 2002; and (3) the comparison of 2002 performance results to the established benchmarks. Items (2) and (3) are provided in this section at Schedule 1, at page 1. Item (1) is provided in Schedule 1, at page 2.

In Section 3 of this filing, the Company has provided documentation for the reliability and safety requirements that are subject to the reporting requirements of the SQ Plan.

Also in Section 3, the Company has provided updated historical performance data through December 31, 2002. Based on this data, the Company has calculated the benchmarks that will be applied to evaluate 2003 performance data in next year’s filing. In that regard, the Company has recalculated benchmarks for three measures for which there was less than the requisite level of data as of December 31, 2001. For these three measures, the benchmarks applied next year are calculated using data through December 31, 2002. As provided by the SQ Plan, benchmarks that were calculated using the requisite level of data as of December 31, 2001, are fixed for the period of the SQ Plan. The fixed and updated benchmarks for 2003 are set forth in Appendix 12.

Specifically Section 3 contains the following:

- Appendix 1: Customer Surveys
- Appendix 2: Customer Average Interruption Duration Index
- Appendix 3: Restricted Work Day Data
- Appendix 4: Annual Line Loss Data
- Appendix 5: Damage to Company Property In Excess of \$50,000
- Appendix 6: Excludable Major Events

- Appendix 7: Tree Trimming Policy
- Appendix 8: Capital Expenditures
- Appendix 9: Spare Component and Acquisition Inventory Policy
- Appendix 10: Poor Performing Circuits
- Appendix 11: Staffing Levels
- Appendix 12: Updated Historical Data and Calculation of Benchmarks for 2003 Performance

II. Performance Review for Year Ending December 31, 2002

A. Customer Service and Billing Performance Measures

1. Telephone Service Factor

For the Telephone Service Factor, the Company is required to track and report data on the percentage of telephone calls from customers that are handled within a 30-second time interval, including both emergency and non-emergency calls.¹ Commonwealth began collecting data based on the percentage of calls answered within 30 seconds in 1997. Based on available data through 2001, the Company's benchmark for this measure is 64.68 percent. In 2002, the Company handled 80.24 percent of calls within 30 seconds, which generated an offset for the Company.

Because the 2002 performance benchmark calculated for the Telephone Service Factor was based on less than 10 years of historical data, the Company has updated this benchmark to include 2002 performance. As shown in Appendix 12, the benchmark against which 2003 performance will be measured has increased from 64.68 percent to 67.27 percent.

2. Service Appointments Met as Scheduled

As of January 1, 2002, the Company instituted a system to compile statistics on the percentage of service appointments met by Company personnel, excluding appointments missed by the customer. A "service appointment" is defined as a mutually agreed upon arrangement for service between the customer and the Company where the arrangement specifies the date for the Company's personnel to perform a service activity that requires the presence of the customer at the time of the service. The Company will continue to update the data annually in accordance with the Department's guidelines, and will establish the benchmark when three years of data become available. As detailed in

¹ In accordance with the Department's directives, effective January 1, 2002, the Company began to measure the percent of calls handled within a 20-second time interval. For this performance measure, the Company handled 76.04 percent of calls within 20 seconds.

Appendix 12, the Company met 100.00 percent of its service appointments as scheduled in 2002.

3. On-Cycle Meter Readings

Commonwealth is required to report on the percentage of meters that are actually read by the Company in accordance with the meter-reading cycle. Based on available data through 2001, the Company's benchmark for this measure is 98.66 percent. In 2002, the Company achieved 99.38 percent of on-cycle meter reads, which is within one standard deviation of the benchmark.

Because the 2002 performance benchmark calculated for On-Cycle Meter Readings was based on less than 10 years of historical data, the Company has updated this benchmark to include 2002 performance. As shown in Appendix 12, the benchmark against which 2003 performance will be measured has increased from 98.66 percent to 98.78 percent.

B. Customer Satisfaction Performance Measures

1. Consumer Division Cases

The Company is required to measure its performance in relation to the number of customer-complaint cases filed with the Department's Consumer Division. Based on the 10 years of data provided to the Company, the performance benchmark shown on Schedule 1 is 1.116, which will remain fixed for the duration of the service-quality plan. In 2002, the number of Consumer Division cases was 1.015, which is within one standard deviation of the benchmark.

2. Billing Adjustments

The Company is required to measure its performance in relation to the amount of revenue adjustments that result from the Department's intervention in a billing dispute with a residential customer. This is based on data that is compiled and reported by the Department and then provided to the Company. Based on the 10 years of data provided to the Company, the performance benchmark shown on Schedule 1 is 37.27, which will remain fixed for the duration of the SQ Plan. In 2002, the number of Billing Adjustments was 53.03, which is within one standard deviation of the benchmark.

C. Safety and Reliability Performance Measures

1. System Average Interruption Duration Index ("SAIDI") and System Average Interruption Frequency ("SAIFI")

The SQ Plan requires the Company to track and report SAIDI/SAIFI statistics and to base the benchmark for this measure on the most recent five years of data. Under the SQ Plan, SAIDI and SAIFI are calculated with the exclusion of "Excludable Major Events." One criterion for an Excludable Major Event is that it be an unplanned interruption of service

to 15 percent or more of the Company's customers in an "operating area." The Department has defined "operating area" to mean the Company's entire service territory. Schedule 1 shows the SAIDI/SAIFI performance benchmarks that were fixed for the duration of the SQ Plan based on the most recent five-years of historical data (1997-2001), excluding major events in the Company's service territory. As shown in Schedule 1, the SAIDI benchmark is 129.85 and the SAIFI benchmark is 1.323. In 2002, the Company's performance statistics were 83.43 for SAIDI and 1.002, for SAIFI, which generated offsets for the Company.

2. Lost-Work Time Accident Rate

The SQ Plan requires the Company to report on the Incidence Rate of Lost Work Time Injuries and Illness per 200,000 Employee Hours, as defined by the U.S. Department of Labor Bureau of Labor Statistics. This data is compiled and reported annually to the U.S. Department of Labor Bureau of Labor Statistics and the Company has 10 years of available data for this measure. Based on that data, the performance benchmark for this measure is 2.63. In 2002, the number of Lost Work Time Accidents was 1.22, which generated an offset for the Company.²

² On January 1, 2002, the U.S. Department of Labor, Occupational Safety and Health Administration, revised the regulations concerning the recording and reporting requirements for occupational injuries and illnesses. See 29 CFR § 1904.7. Specifically, the revised regulations require the Company to include the number of calendar days that an employee was unable to work as a result of injury, regardless of whether or not the employee was scheduled to work on those days (29 CFR § 1904.7(iv)). The Company's performance benchmark for Lost-Work Time Accident Rate, which is based on ten years of historical information, excludes weekends, holidays or other days that an employee would not normally have reported to work. For OSHA reporting purposes, the Company will maintain a log of occupational injuries or illnesses consistent with the new regulation going forward. However, for purposes of the annual service-quality report, the Company will track and report its performance consistent with the prior version of the regulation so that the performance data will match the historical data composing the performance benchmark.

**COMMONWEALTH ELECTRIC COMPANY
SERVICE QUALITY STANDARDS**

	Required Years	Actual Years	Historical		Penalty/ Offset	Max (2)	Results - 2002				
Measures	History	Available	Average	Std Dev	Weight	Penalty	Observ.	Variance	No. of Std Devs	Penalty / (Offset)	
Customer Service and Billing											
% Calls Answered (1)	10	5	64.68%	4.29%	12.5%	\$ 410,901	80.24%	15.56%	3.6245	\$ (410,901)	
% Services Appointments Met	10	0	NA	NA	12.5%	410,901	NA	NA	NA	NA	
% On-Cycle Meter Reads	10	5	98.66%	1.00%	10.0%	328,721	99.38%	0.72%	0.7246	0	
Safety and Reliability											
Lost Work Day Accidents	10	10	2.63	0.80	10.0%	328,721	1.22	-1.41	-1.7650	(256,014)	
SAIDI - 5 yrs	5	5	129.85	28.09	22.5%	739,622	83.43	-46.42	-1.6528	(505,104)	
SAIFI - 5 yrs	5	5	1.323	0.225	22.5%	739,622	1.002	-0.32	-1.4277	(376,910)	
Consumer Division Statistics											
Consumer Division Cases	10	10	1.116	0.227	5.0%	164,361	1.015	-0.101	-0.4464	0	
Billing Adjustments	10	10	37.27	40.43	5.0%	164,361	53.03	15.76	0.3899	0	
Total					100.0%	\$ 3,287,210				\$ (1,548,929)	

Notes

(1) Telephone statistic based on Calls Handled within 30 Seconds; includes calls abandoned after threshold.

(2) Max penalty is incurred at 2 sd from average

(3) Two percent of total T&D revenue in 2002.

Less: Service Guarantee Payout

Maximum Penalty / (Offset)

\$3,287,235

25

\$3,287,210

COMMONWEALTH ELECTRIC COMPANY

Measures	History (1)																
	2001	2000	1999	1998	1997	1996	1995	1994	1993	1992	1991	1990	1989	1988	Sample	Average	Std Dev
<u>Customer Service and Billing</u>																	
% Calls Answered	60.26%	71.16%	61.55%	64.26%	66.17%										5	64.68%	4.29%
% Services Appointments Met															0	NA	NA
% On-Cycle Meter Reads	98.99%	99.37%	99.08%	98.95%	96.90%										5	98.66%	1.00%
<u>Safety and Reliability</u>																	
Lost Work Day Accidents	1.54	2.49	2.89	1.43	2.35	3.24	2.81	3.84	3.58	2.17					10	2.63	0.80
SAIDI - 5 yrs	99.52	147.23	154.32	98.91	149.28										5	129.85	28.09
SAIFI - 5 yrs	1.207	1.510	1.501	0.985	1.413										5	1.323	0.225
<u>Consumer Division Statistics</u>																	
Consumer Division Cases	0.944	0.792	1.003	1.050	0.972	1.019	1.191	1.240	1.450	1.501					10	1.116	0.227
Billing Adjustments	8.00	0.11	11.78	37.87	93.94	14.78	18.91	27.25	35.21	124.81					10	37.27	40.43

Notes
(1) 12 Month period January to December.

DTE 03-17

Commonwealth Electric Company

Annual Service Quality Report

SECTION THREE

Year Ending December 31, 2002

Back-up Data and Supporting Schedules



SECTION 3

I. Non-Penalty Related Service Quality Information

Section VIII of the SQ Plan sets forth a number of non-penalty related reporting requirements for the Company's annual service-quality filings. These reports are as follows:

Appendix 1: Customer Surveys

Pursuant to section III.C of the SQ Plan, Commonwealth conducted an annual survey of (1) overall customer satisfaction as indicated by a statistically representative sample of residential customers, and (2) post-transaction customer satisfaction as indicated by a sample of randomly selected customers who have contacted the Company's customer-service department during the year. The surveys were conducted by Research International, which is an independent research firm with significant experience in conducting customer satisfaction surveys. The results of these surveys are presented in Appendix 1.

Appendix 2: Customer Average Interruption Duration Index ("CAIDI")

The CAIDI performance statistics for the ten most recent years ending December 31, 2002 are provided in Appendix 2. Historically, the Company's CAIDI performance statistics have been calculated on the same basis as SAIDI and SAIFI. As a result, the CAIDI performance statistics for Commonwealth are based on a calculation that excludes major events that occur on a service-area basis (rather than a company-wide basis), as discussed above in relation to the SAIDI/SAIFI benchmarks.

In addition, it should be noted that, under the provisions of the SQ Plan, when customers lose power as a result of the process of restoring, the duration of these additional outages is included in SAIDI, but the additional number of interruptions is excluded from the calculation of SAIFI. See, Section V(I). Further, under Section I(B), CAIDI is calculated as SAIDI divided by SAIFI. A consequence of this construction is that, in calculating CAIDI, the numerator and the denominator are not representing the same outages, i.e., there are outages that are included in the numerator, but not in the denominator. To be consistent with industry practice, the numerator and the denominator of the CAIDI calculation should represent the same outages.¹

Appendix 3: Restricted Work Day Rate

The Restricted Work Day Rate is the Incidence Rate of Restricted Work Cases Per 200,000 Employee Hours, as defined by the U.S. Department of Labor, Bureau of

¹ The Company's CAIDI statistic for 2002 would be 74.43 with the outages associated with power restoration excluded from SAIDI.

Labor Statistics. This information is provided for the most recent ten years in Appendix 3.

Appendix 4: Electric Distribution Line Loss

Pursuant to section VIII.A of the SQ Plan, the Company is required to report electric distribution line loss on an annual basis. For 2002, this information is provided in Appendix 4. The annual line loss value for electric companies is the net result of reconciling the total sources of power to the amount of electricity supplied to customers, plus company use. The derivation of the calculation is set forth on page 401a of the Company's annual FERC Form 1.

Appendix 5: Damage to Company Property In Excess of \$50,000

Pursuant to section VIII.A of the SQ Plan, the Company is required to provide an annual report of property-damage incidents involving property damage to Company-owned facilities exceeding \$50,000 per incident. For 2002, there were no such incidents.

Appendix 6: Excludable Major Events

Pursuant to section VIII.D of the SQ Plan, the Company is required to identify and report on an annual basis the outages that are considered Excludable Major Events in the calculation of SAIDI/SAIFI statistics. Information for 2002 is provided in Appendix 6.

Appendix 7: Tree Trimming Policy

The Company's Tree-Trimming Policy is provided as Appendix 7.

Appendix 8: Capital Expenditures

The Company's data on capital expenditures for the ten most recent years (1993 through 2002) is provided in Appendix 8.

Appendix 9: Spare Component and Acquisition Inventory Policy

Pursuant to section VIII.F of the SQ Plan, Commonwealth is required to report on an annual basis its policy for identifying, acquiring, and stocking critical spare components for its distribution and transmission system. The Spare Component and Acquisition Inventory Policy is provided as Appendix 9.

Appendix 10: Poor Performing Circuits

Pursuant to section VIII.G of the SQ Plan, Commonwealth is required to identify and report on an annual basis its poor performing circuits. For 2002, the Company's information is provided as Appendix 10. Poor performing circuits are any distribution feeder that:

- (a) has sustained a circuit SAIDI or SAIFI value for a reporting year that is among the highest (worst) ten percent of that utility's feeders for any two consecutive reporting years; or
- (b) has sustained a circuit SAIDI or SAIFI value for a reporting year that is more than 300 percent greater than the system average of all feeders in any two consecutive reporting years.

Appendix 11: Staffing Levels

Staffing level information for the Company is provided in Appendix 11.

Appendix 12: Performance Benchmarks for 2003

In Appendix 12, the Company has updated historical data to include 2002 performance data in the calculation of benchmarks for the 2003 reporting period, where the benchmarks were not fixed for the duration of the SQ Plan.

II. Customer Service Guarantees

Pursuant to section XI of the SQ Plan, Commonwealth is required to provide information as to the customer payments credited as a result of the customer-service guarantee program during the service-measurement period. As indicated in the SQ Plan, Commonwealth credits the customer's account by \$25.00 if a meter reading is inaccurate, if the Company knowingly fails to inform a customer that it will be more than 30 minutes late for a service appointment, if there is an error in the direct payment or pay-by-phone billing systems, if the Company fails to inform a customer of a scheduled service interruption, or if the Company does not respond to a billing question by the next business day. In addition, if a new residential service line is not connected by the agreed date (after all permits are received), the first month's bill is free (minimum \$25, maximum \$100). In 2002, Commonwealth remitted to customers a total of \$25.00 under its Customer-Service Guarantee program.

III. Conclusion

As set forth above, this filing establishes the performance benchmarks for service-quality measures subject to the penalty mechanism based on historical data available through December 31, 2002. On March 1, 2004, Commonwealth will make its annual filing, which will compare the Company's performance in 2003 to the benchmarks established in this filing. The Company's March 2004 filing will also include documentation to satisfy all other reporting requirements set forth in the approved SQ Plan.

Commonwealth Electric Company

Customer Surveys

Year Ending December 31, 2002



Appendix 1

RESEARCH INTERNATIONAL



MEMO

TO NSTAR
FROM Research International
DATE February 19, 2003

RE: Residential customer satisfaction metrics (former COM/Electric service area)

The following results are from a representative sample of 700 NSTAR residential customers. Of the 700 surveys, 550 were with NSTAR Electric residential customers (300 in the former Boston Edison service area, and 250 in the former COM/Electric service area) and 150 with NSTAR Gas residential customers. Respondents were asked to evaluate their overall satisfaction with NSTAR using a 7-point scale, where a rating of "7" means "very satisfied." The data from NSTAR Electric customers are weighted to reflect the true proportion of former Boston Edison customers to former COM/Electric customers. *"Don't know" responses are excluded from the analysis.*

- More than eight in ten (84.8%) NSTAR Electric customers living in the former COM/Electric service area rate positively their overall satisfaction with NSTAR (5 or higher on 7-point scale).

The associated margin of error for the sample of 250 surveys is +/-6.2 percentage points at the midpoint of the 95% confidence level

Jeff Banks
Senior Vice President
Research International/Cambridge
617.661.0110
955 Massachusetts Avenue
Cambridge, MA 02139

RESEARCH INTERNATIONAL



MEMO

TO NSTAR
FROM Research International
DATE February 19, 2003

RE: Post-transaction residential customer satisfaction metrics (former COM/Electric service area)

The following results are from a representative sample of 900 NSTAR residential customers who recently contacted NSTAR for service. Of the 900 surveys, 724 were with NSTAR Electric residential customers (458 in the former Boston Edison service area, and 266 in the former COM/Electric service area) and 176 with NSTAR Gas residential customers. Respondents were asked to think about the most recent time they called NSTAR and to evaluate their *overall satisfaction with the service they received from the customer service department of NSTAR* using a 7-point scale, where a rating of "7" means "very satisfied." *"Don't know" responses are excluded from the analysis.*

- More than eight in ten (85.9%) NSTAR Electric customers living in the former COM/Electric service area rate positively their overall satisfaction with NSTAR's customer service (5 or higher on 7-point scale).

The associated margin of error for the overall sample of 266 surveys is +/-6.0 percentage points at the midpoint of the 95% confidence level

Jeff Banks
Senior Vice President
Research International/Cambridge
617.661.0110
955 Massachusetts Avenue
Cambridge, MA 02139

Commonwealth Electric Company

Customer Average Interruption Duration Index

CAIDI

Year Ending December 31, 2002



Appendix 2

Commonwealth Electric Company
SQ Plan
Historical Data

<u>Year</u>	<u>SAIFI</u>	<u>CAIDI</u>	<u>SAIDI</u>
1993	1.077	90.76	97.74
1994	1.881	75.38	141.77
1995	1.539	63.70	98.03
1996	2.309	86.58	199.87
1997	1.413	105.64	149.28
1998	0.985	100.46	98.91
1999	1.501	102.81	154.32
2000	1.510	97.53	147.23
2001	1.207	82.48	99.52
2002	1.002	83.22	83.43

Excludes outages affecting greater than 15% of Company's service territory.

Commonwealth Electric Company

Restricted Work Day Data

Year Ending December 31, 2002



Appendix 3

Injury Statistics

Restricted Duty Cases

Commonwealth Electric and Cambridge Electric Companies

	<u>Hrs. Wkd.</u>	<u># of Cases</u>	<u>Rate</u>
1993	2,289,580	16	1.40
1994	2,184,787	30	2.75
1995	2,133,823	28	2.62
1996	2,097,821	17	1.62
1997	1,959,178	18	1.84
1998	1,821,364	18	1.98
1999	1,520,970	19	2.50
2000	1,363,403	18	2.64
2001	1,301,082	21	3.23
2002	1,666,906	23	2.72
Mean			2.33

Incident Rate = Number of Cases x 200,000/Hours Worked

Commonwealth Electric Company

Annual Line Loss Data

Year Ending December 31, 2002



Appendix 4

Annual Line Loss Data Commonwealth Electric Company	
1993	6.1%
1994	5.4%
1995	5.5%
1996	4.1%
1997	4.0%
1998	4.9%
1999	5.7%
2000	6.9%
2001	6.9%
2002**	5.7%

** Subject to finalization of FERC FORM1 1 and DTE Annual Report for year-end 2002.

Commonwealth Electric Company

Damage to Company Property

Year Ending December 31, 2002



Appendix 5

Commonwealth Electric Company

Damage to Company Property in Excess of \$50,000

- None

Commonwealth Electric Company

Excludable Major Event

Year Ending December 31, 2002



Appendix 6

Commonwealth Electric Company

Excludable Major Events considered in the calculation of SAIDI / SAIFI for 2002.

- None

Commonwealth Electric Company

Tree Trimming Policy

Year Ending December 31, 2002



Appendix 7

NSTAR DISTRIBUTION TREE PRUNING POLICY

General

The Distribution Pruning Policy is intended to provide pruning contractors with guidelines for performing work acceptable to the NSTAR Company, including proper pruning techniques, work progress reporting and time reporting.

The Policy also documents general management procedures for dealing with the various aspects of Pruning Program Control.

The Policy pertains to both maintenance pruning, which is done on an ongoing cyclic basis of approximately three to six years and to “new work” pruning.

Note: Company representative or delegate as referred to in this policy shall be understood to mean those individuals normally assigned to monitor tree crew activities in a given district or area within a district.

Guidelines For Tree Pruning And Removal

- 1) Provisions of the latest revisions to ANSI A-300 American National Standard for Tree Care Operations – Tree Shrub and Other Woody Plant Maintenance – Standard Practices shall be followed.
- 2) The desired amount of clearance necessary for conductors and electrical equipment should be such that high winds, rain, heavy snow, ice or a combination of any of them will not cause limbs or trees to come in contact with wires or other equipment. Effort should be made to remove any dead trees or limbs that in the event of their falling could contact conductors.
 - a) Clearance Guidelines – Refer to Exhibit 1.
 - b) Road Screens – Where existing, shall be topped depending on the ground clearance of the conductors above, using the drop crotch or “Natural Pruning” technique as shown in Exhibit 1.
- 3) Generally Accepted Scientific Arboricultural Principles as Applied to line Clearance Work – For safe and healthy trees, the following recommendations are suggested:
 - a) Branches growing into a conductor should be removed by cutting back at a lateral or main side branch, rather than stub cutting. (“Natural Pruning”)
 - b) All cuts shall be properly made, using undercutting to avoid damage by loosening or stripping of bark; the so-called “Branch Bark Collar” shall be left intact but no stubs shall remain. Cuts shall be smooth to allow for callus tissue to form and to retard decay. Properly made saw cuts at the laterals, where the lateral is at least one third (1/3) the size of the branch or leader removed, reduce the number and vigor of re-growth sprouts through the trees natural growth mechanisms. (“Natural Pruning”).

- c) In general, tree paint is not required. In specific instances state or municipal authorities may require tree paint. In such instances growth retardant paint should be used. Asphalt based tree paints shall not be used as they promote growth of certain rot fungi.
- d) Remove raised sucker clusters at parent limb and remove undesirable limbs that have been stubbed off and have formed accumulated sucker clusters.
- e) Directional prune so that growth will be away from wires.
- f) Lighten overhanging (within 10' of trimmed zone) or adjacent leaders and branches and shorten evergreens overhanging conductors to prevent limbs touching or breaking off and falling on lines in severe storms.
- g) Remove leaders and limbs that are a hazard to lines due to death, decay, weak configuration and split or weak crotches.
- h) Only appropriate tree tools in good working condition shall be used.
- i) Climbing irons shall not be used in any tree unless the tree is to be removed.
- j) All severed limbs and branches (hangers) shall be removed from trees after pruning.
- k) Guidelines for tree removal.
 - i) Unless previous arrangement has been made with the Company Representative, trees that are a hazard to the lines shall be removed; i.e. any tree which by the nature of it's health, size or condition endangers the line.
 - ii) Defective or diseased trees shall be removed whenever possible.
 - iii) Fast growing and weed trees shall be removed as undesirable species, whenever possible.
 - iv) Trees shall be felled away from conductors.
 - v) In areas where damage might be caused to conductors or property, trees shall be stripped of all limbs with the trunk removed in sections, as necessary.
 - vi) All brush shall be removed daily from public thoroughfares and other improved places unless otherwise arranged with the Company Representative.
 - vii) All stumps shall be cut flush and parallel to the ground. Tree stumps shall not exceed a maximum height of three (3) inches. All brush shall be cut flush and parallel to the ground.
 - viii) Wood and brush (cribbing) shall be used as a cushion to protect from potential damage due to felling trees or heavy limb sections. The probability of a bouncing effect is normally increased when using cribbing and should be allowed for.
- 4) Prioritization of Pruning – Distribution pruning should be performed on a circuit basis whenever possible. Always start pruning from the substation out, as this area is of greatest importance due to the large number of customers affected by outages caused in this area.
- 5) Three-phase lines should have greater clearance and attention than single-phase spur lines. Pruning is performed to protect the largest number of customers from an interruption. Three-phase interruptions will affect more customers.

6) Safety – Good Relations – Clean-up

- a) The contractor will take all safety and protective precautions and with respect thereto will strictly enforce all applicable regulations of Municipal, State and Federal Laws, the various insurers and the Company. These shall include OSHA and ANSI Z133.1.
- b) A neat appearance, pleasant approach and a clear explanation as to what you mean or want when contacting people. In any instance where there is a misunderstanding or a possible cause for trouble with a customer or municipal official, notify the Company Representative, so that proper action can be taken. When a property owner or municipal official absolutely will not allow proper pruning refer the situation to the Company Representative in writing. If pruning in a given area is under dispute – move to another area.
 - i) Utility Company Relations – Tree crew to contact the Company every day and report work location; details of who to report to, when and where will be specified by the local Company Representative.
 - ii) Outage – Whenever there is a question of a possible accidental outage of power caused by a tree crew, the Company is to be notified immediately.
 - iii) Municipal Regulations – Notify the proper municipal official (Tree Warden, etc.) as required and let them know what location you are working in. Get permission to do tree work on municipal trees from the proper authority before doing the work.
 - iv) State Regulations – When doing tree work on a State Highway have a copy of the State Tree Pruning Permit with Permit Number. All tree work on State Highways must be approved and supervised by the proper State Official. State regulations on barricades and warning signs must be observed.

Dispose of all debris properly and leave the work area in a neat and clean condition. Unless otherwise specified, wood shall be left for property owner. All trucks will have leaf blowers to clear roadway areas.

Contractor Responsibility

“The relationship of the Company and the Contractor is acknowledged to be that of owner and independent contractor. The means and methods employed for performing the details of pruning shall be the responsibility of the Contractor, subject to the suggestions and approvals of the Company’s designated representative.”

- 1. Compliance with Laws and Regulations – The Contractor shall comply with all applicable laws and regulations and all work and materials are to comply in every respect with all applicable codes, laws and regulations. All necessary permits, licenses, etc., for the Work unless obtained by the Company are to be obtained and paid for by the Contractor, the Company to reimburse the Contractor for the cost thereof unless the Work is being done on a fixed fee basis.

2. Instructions to Contractor – Pruning work includes the furnishing of all supervision, labor, equipment, tools and services necessary to trim trees in designated areas and in a manner acceptable to local or state authorities and Company Representative, per the Pruning Contract/Purchase Order. The Contractor will report daily in writing to the Company Representative any damaged Company equipment (insulators, crossarms, etc.) encountered in the course of his work.
3. All crews are required to attend a yearly review of NSTAR Pruning Policy at the expense of the contractor

Other Related Items

1. Privately Owned Facilities – The Company in general will not authorize pruning of privately owned facilities.
2. Contractor List – Owners of private electrical facilities may occasionally ask for recommendations concerning private contractors for line maintenance or pruning work. The Company position is not to make recommendation of any specific contractor for reasons of liability.
3. Refusal to Allow Pruning – When the pruning contractor reports a refusal to allow pruning, the Company Representative shall contact the involved party in an effort to secure the proper pruning. If no agreement can be reached the refusing party shall be contacted via registered mail (Return Receipt Requested)

The letter will relate our reasons for pruning i.e. protection of our facilities, reliability of service, protection of the public (tree climbers) and serve as documentation of our attempt to secure adequate pruning. Hopefully this letter will prompt some to reconsider their refusal. If not, we will have documentation of our intent and attempt to secure adequate pruning.

4. Documentation of Tree Removal – When, due to diseased or dead state, ornamental or large shade trees are by necessity removed, documentation in the form of detailed notes and/or photographs should be kept. This documentation may be valuable in the event a customer later brings a claim against the Company for the value of a tree claiming “wrongful removal”.

Methods of Pruning

There are many methods of pruning trees for line clearance, but not all methods are attractive or advantageous to the tree, nor are all methods effective for long-term line clearance. The basic pruning methods are pollarding, shearing or rounding over and natural pruning (Fig. 3).

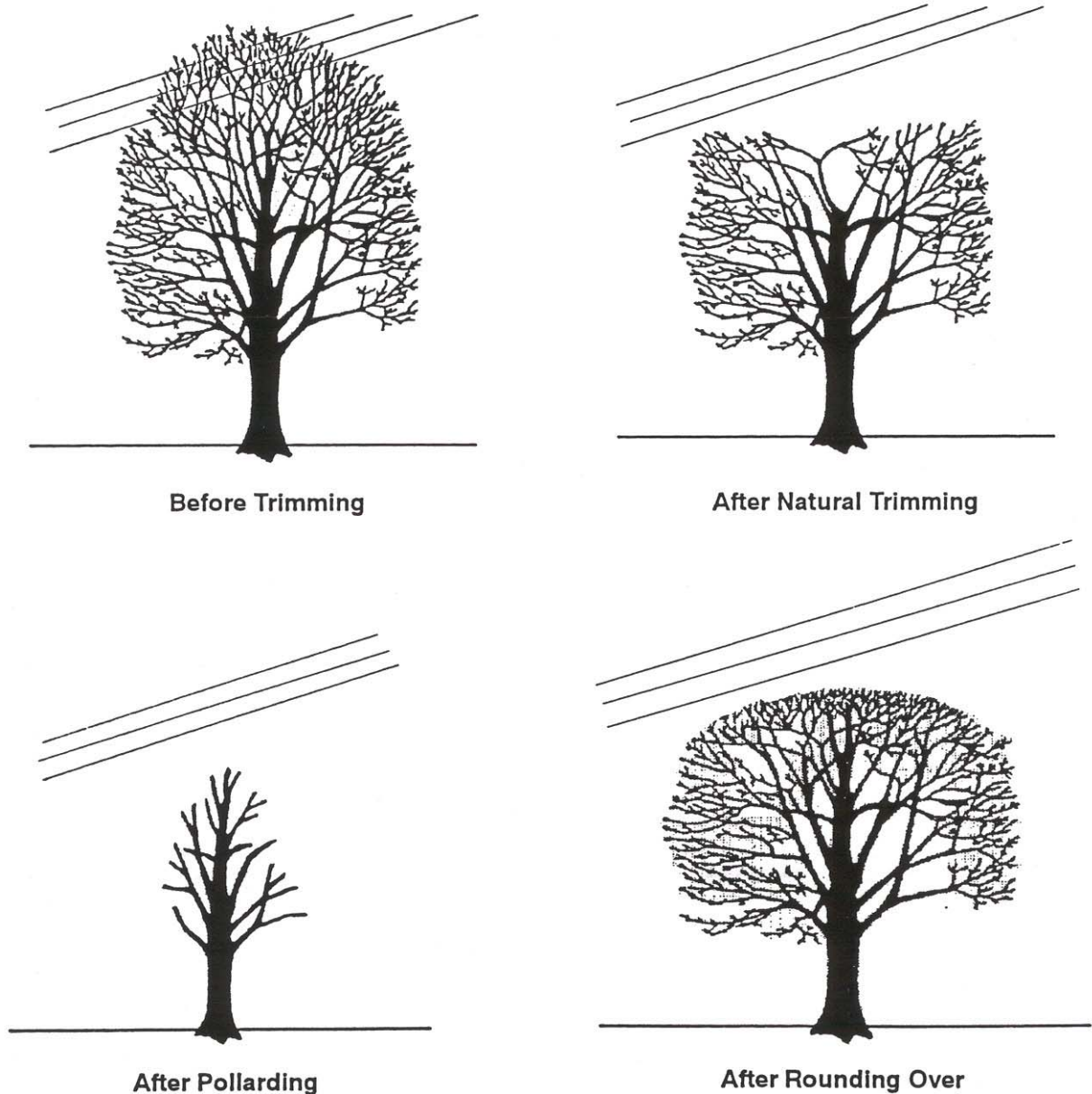


Figure 3. Basic Trimming Methods

Stubbing off major limbs by pollarding is not a desirable pruning practice.

The result is not only unsightly, but multitudes of fast-growing suckers sprout from the stubs and soon result in line clearance problems more serious than before. The stubs are also likely to fall victim to decay or disease. Finally, this method of pruning attracts unfavorable public attention.

Shearing or Rounding Over consists of making many small cuts so that the treetop is sheared in a uniform line. This results in rapid re-growth of many small sprouts, called suckers, directly toward the conductors. Because of this rapid re-growth of suckers, trees trimmed by the rounding over method need to be re-trimmed sooner than trees trimmed by the natural pruning period.

Natural Pruning is the method recommended by most professionals. Natural pruning is cutting branches flush at a suitable parent limb, back toward the center of the tree. This method of pruning is sometimes called “drop crutching” or “lateral pruning”. An attempt is made to remove large branches to laterals at least one-third the diameter of the branch being removed. All cuts should be flush to avoid leaving stubs. Natural pruning is especially adapted to the topping of large trees where a great deal of wood must be removed. In natural pruning, most cuts are made on larger limbs with a saw, and little pole prune work is required. The results are natural-looking trees, even if large amounts of wood have been removed. Natural pruning is also directional pruning, since it tends to guide the growth of the tree away from the wires (Figure 4). Stubbing, on the other hand, tends to promote rapid sucker growth right back into the conductors.

It should be emphasized that natural clearance is highly effective in reducing future costs, and that two or three natural pruning cycles will produce an ideal situation for both the utility and the tree owner. Most shade trees lend themselves easily to this type of pruning. Elm, Norway Maple, Red Oak, Red Maple, Sugar Maple, Silver Maple and European Linden, the most common street trees, react especially well to natural pruning methods.

Crown Reduction is cutting back portions of the upper crown of a tree. Reducing is indicated when a tree is located directly beneath a line. The main leader or leaders are cut back to a lateral, which should be at least one-third the diameter of the limb being removed. Most cuts should be made with a saw. A pole pruner is used only to cut lateral branches. To minimize re-growth, no more than one-fourth of the crown should be removed when topping (Figure 5).

Side Pruning is cutting back or removing side branches that threaten the conductors. Side pruning is required where trees are growing adjacent to utility lines. Limbs should be removed at a lateral branch. Notches in tree crowns should be avoided, if possible. Shortening branches above and below the indented area, or balancing the opposite side if the crown, will usually improve the appearance of the tree. When pruning, all dead branches over the wires must be removed, since this dead wood could easily break off and cause an interruption in service. (Figure 5)

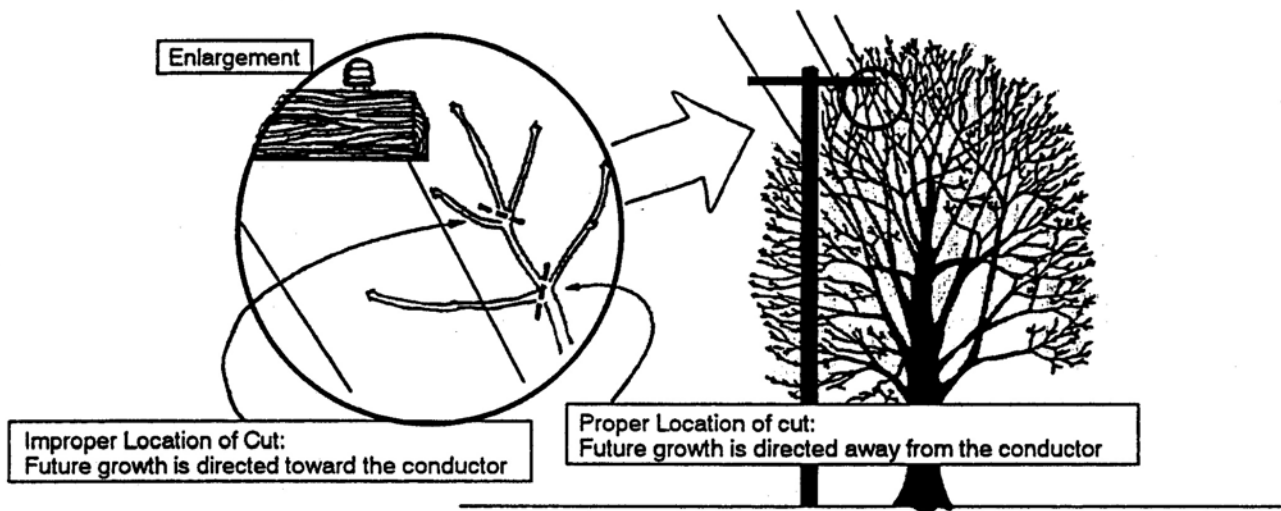


Figure 4. Natural Trimming (to direct growth away from wires)

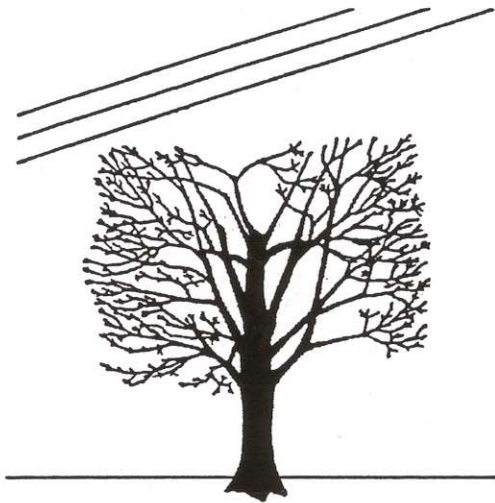
Side Trimming is cutting back or removing side branches that threaten the conductors. Side trimming is required where trees are growing adjacent to utility lines. Limbs should be removed at a lateral branch. Notches in tree crowns should be avoided, if possible. Shortening branches above and below the indented area, or balancing the opposite side of the crown, will usually improve the appearance of the tree. When trimming, all dead branches over the wires must be removed, since this dead wood could easily break off and cause an interruption in service (Figure 5).

Overhang Or Under Pruning consists of removing limbs beneath the tree crown to allow wires to pass below the tree crown. This type of pruning will allow the tree to retain its natural shape and continue its normal growth. Overhangs are hazards when lines pass beneath a tree and should be removed according to the species of the tree, location and the general policy of the utility. When pruning, all dead branches above the wires are removed, since this dead wood could easily break off and cause an interruption. Many utilities have a set removal program for trees that overhang important lines (Figure 5).

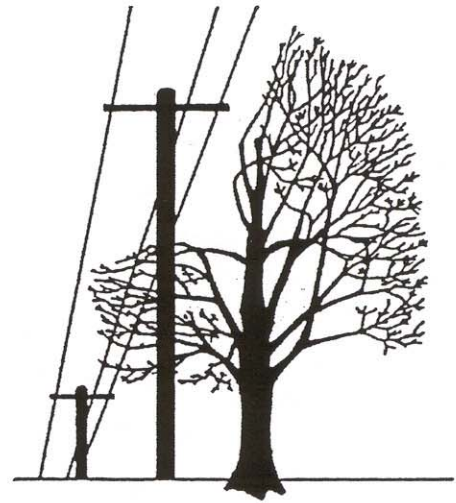
Through Pruning is the removal of branches within the crown to allow lines to pass through the tree. It is best suited for secondaries, streetlight circuits, and cables, although it is often used on primary circuits where there is no other way of pruning the tree. Cuts should be made at crotches to encourage growth away from the lines (Figure 5).

Combinations - It is often necessary to combine several types of pruning in order to maintain acceptable tree appearance and provide adequate clearances.

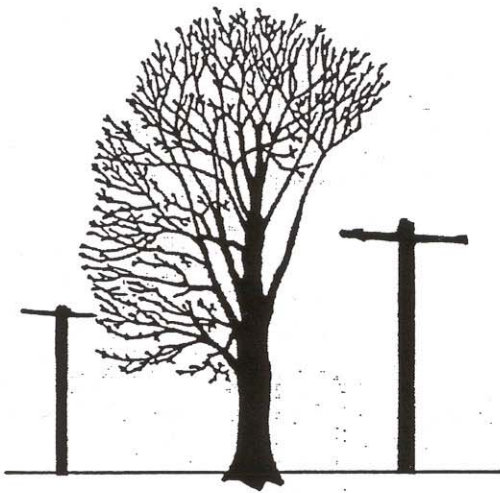
METHODS OF TRIMMING (con't)



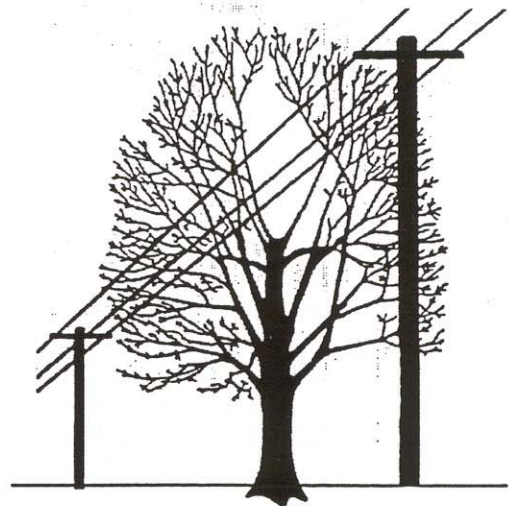
After Top Trimming



After Side Trimming



After Under Trimming



After Through Trimming

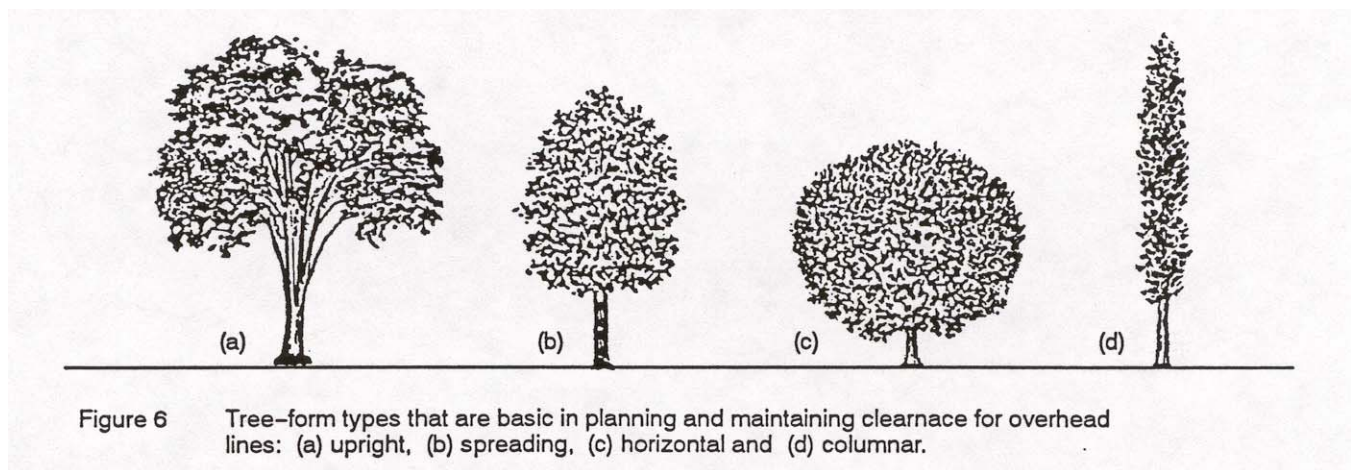
Figure 5. Four types of natural trimming.

ANSI A300 “American Standard for Tree Care Operations – Tree, Shrub and Other Woody Plant Maintenance – Standard Practices”, presents performance standards for the care and maintenance of trees and should be considered a part of this appendix and adhered to in tree operations under this policy.

Techniques

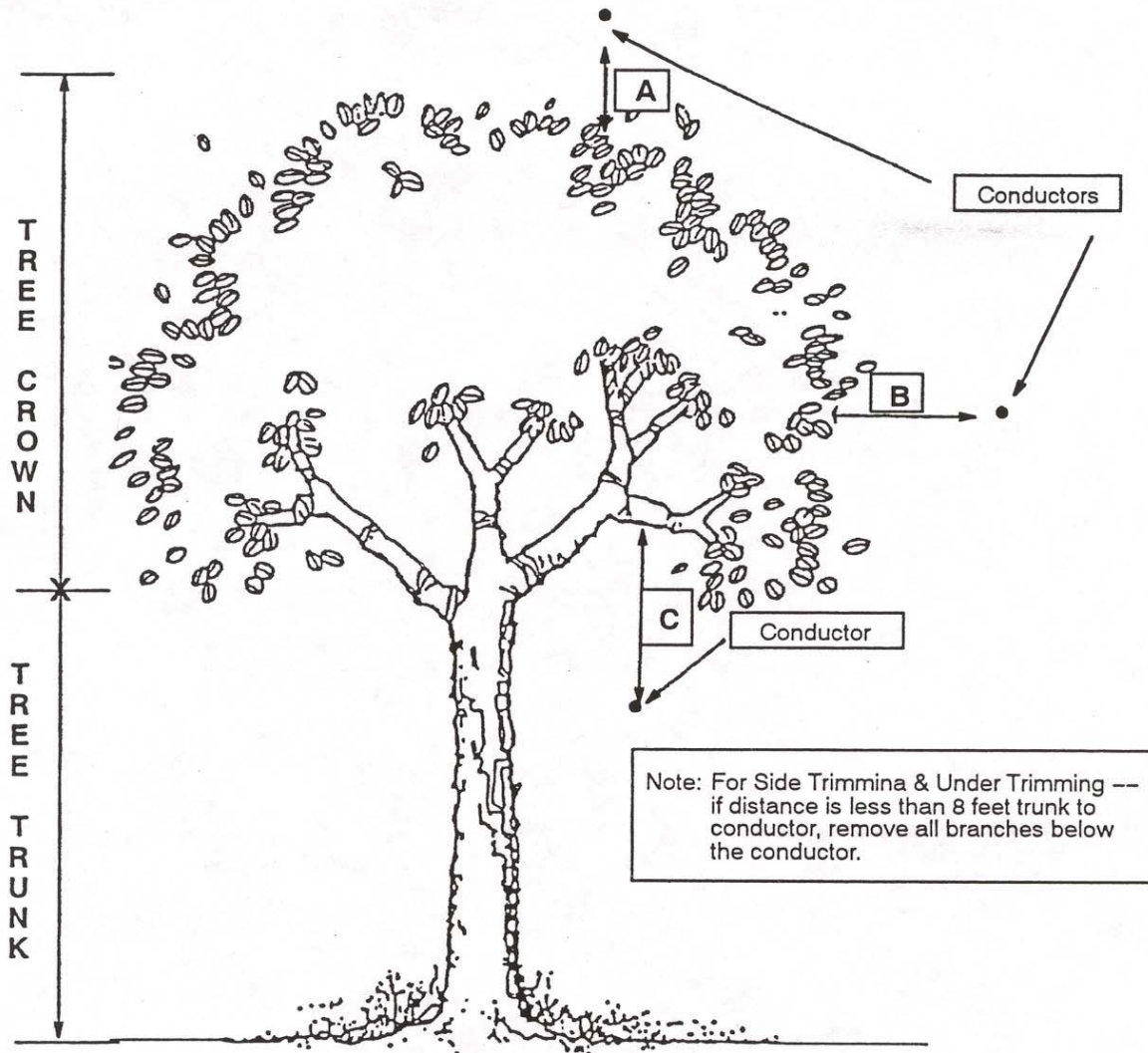
Proper clearance for any type of overhead line is measured not only in feet of clearance but in effectiveness. Both tree and overhead line characteristics must be known to get the maximum effective clearance for each tree. Clearance not only must be adequate when the tree is trimmed but must last. Therefore, each tree should be trimmed so it will need less work at the next trim cycle.

Before tree trimmers begin work, they plan how they are going to trim each tree. Consideration is given to how and when a tree is going to re-grow after it is trimmed. Trees can usually be placed into one of four tree-form types: upright, spreading, horizontal or columnar (Figure 6). If possible, the natural form of the tree should be maintained so that it does not look heavily trimmed.



All line clearance tree pruning should be done in accordance with the American National Standard Safety Requirements for Pruning, Repairing, Maintaining and Removing Trees, and for Cutting Brush” (ANSI Z133.1). The ANSI Z133 standard provides safety criteria for line clearance tree trimmers and the public. Minimum working distances from energized conductors are listed and must always be observed.

EXHIBIT 1



Note: Our objective is to obtain trim clearances as indicated. However, extenuating circumstances may dictate that lesser clearances be accepted.

CLEARANCE	TYPE OF TRIMMING	MINIMUM CLEARANCE FOR 25 KV OR BELOW *
"A"	Topping	8 Feet
"B"	Side Trimming	8 Feet
"C"	Under Trimming (Remove overhang situations where possible)	12 Feet **

* Services should be trimmed only to avoid contact.

** Thin, lighten, or shorten limbs above this point on pines to prevent snow loading.

Secondary electric lines shall be cleared for a minimum clearance of three feet.

Commonwealth Electric Company

Capital Expenditures

Year Ending December 31, 2002



Appendix 8

**Commonwealth Electric Company
2002 SQI Capital Spending**

(Dollars in Thousands)

District	Town	Description	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Distribution Customer Care:												
	All Areas	Purchase and Install Customer Meters	\$ 567	\$ 1,067	\$ 1,124	\$ 825	\$ 1,143	\$ 919	\$ 1,129	\$ 968	\$ 391	\$ 922
Distribution Electric Delivery:												
All Areas	All Areas	Private Pole Acquisition	\$ -	\$ -	\$ 15	\$ 114	\$ 114	\$ 70	\$ 39	\$ 5	\$ (1)	\$ -
All Areas	All Areas	Overhead Distribution Equipment	2,565	8,230	8,906	8,183	9,505	8,189	8,890	6,492	5,959	-
All Areas	All Areas	Underground Distribution Equipment	1,813	3,157	3,104	2,411	3,019	3,374	2,766	1,805	1,173	-
All Areas	All Areas	Overhead Services	395	1,026	1,203	1,211	1,395	1,627	1,295	1,174	851	-
All Areas	All Areas	Underground Services	119	391	323	337	395	417	378	-	-	-
		New Customer Connections	-	-	-	-	-	-	-	-	-	1,038
		Acts of Public Authority	-	-	-	-	-	-	-	-	-	268
All Areas	All Areas	Purchase and Install Transformers	1,427	2,515	2,490	2,372	2,222	3,326	3,648	2,983	2,756	1,462
All Areas	All Areas	Minor Projects	-	-	129	71	34	63	80	141	37	4
All Areas	All Areas	Substation Preparation	-	-	-	-	-	-	-	42	-	-
All Areas	All Areas	Upgrade/Replace Substation Equipment	220	562	482	486	534	570	467	242	22	230
Plymouth		16J1 Circuit Conversion	-	-	111	551	236	-	-	-	-	-
Plymouth		17J1 Circuit Reconductoring	45	-	-	-	-	-	-	-	-	-
Cape & Vineyard		30/40/50 MVA Power Transformer Rep	(24)	-	-	-	-	-	-	-	-	-
		4Kv Switch Replacement	-	-	-	-	-	-	-	-	96	(25)
		7500 kVa Mobile Substation	-	-	-	-	-	-	-	-	160	653
Plymouth		901-930 High Voltage Tie-RTE	-	363	(17)	-	-	-	-	-	-	-
Plymouth		924 Circuit Tie	-	-	-	-	-	158	166	-	-	-
Cape & Vineyard		93 Line Cable Replacements	15	-	-	-	-	-	-	-	-	-
Plymouth		930-4J1 Circuit Conversion	-	-	291	-	-	-	-	-	-	-
Plymouth		974 Circuit Step-down Banks	-	-	59	-	-	-	-	-	-	-
Cape & Vineyard		99 Cable Replacement	-	-	-	680	88	-	-	-	-	-
Cape & Vineyard	Yarmouth	Act of Public Authority Circuit 536 Buck Island	-	-	-	-	-	-	-	-	80	9
Cape & Vineyard	Osterville	Bay Road, Osterville	-	-	-	-	-	-	-	236	-	-
		Bowdoin Street Correct Low Voltage	-	-	-	-	-	-	-	-	24	-
Cape & Vineyard		Build Alternate Feed For Vineyard	47	-	-	-	-	-	-	-	-	-
		Engineering Special Station 518 Oak Street	-	-	-	-	-	-	-	-	15	-
New Bedford	New Bedford	Cannon Street Deactivation	-	4	-	-	-	-	-	-	-	-
Cape & Vineyard		Cape Keep Cost	-	-	-	-	-	-	-	-	74	-
Plymouth		Circuit 910, 931 and 14 Line	121	(14)	-	-	-	-	-	-	-	-
Cape & Vineyard	Yarmouth	Circuit 915 Conversion	-	-	-	-	-	-	-	-	98	21
New Bedford		Circuit 88 Reconductoring	-	-	132	-	-	-	-	-	-	-
New Bedford	New Bedford	Convert Acushnet Ave	-	-	-	-	-	-	-	-	21	69
Cape & Vineyard		Circuit 935 Overhead Conversion & Recond	-	24	-	-	-	-	-	-	-	-
	All Areas	Conservation Voltage Reduction	-	645	310	156	112	34	15	-	-	-
Plymouth		Double-End Valley 115KV Substation	-	-	-	-	-	-	-	-	5	1,024
New Bedford		New Bedford Industrial Park Double Circuit	-	-	-	-	-	-	-	-	15	85
Cape & Vineyard	Falmouth	East Falmouth Conversion	41	153	368	37	-	-	-	-	-	-
Cape & Vineyard	Falmouth	Falmouth Beautification	-	-	-	-	-	-	-	-	82	20
Cape & Vineyard	Falmouth	Falmouth to Oak Bluffs Substation Cable	-	898	3,114	-	-	-	-	-	-	-
Cape & Vineyard	Falmouth	Falmouth 23KV Breaker for Vineyard	-	-	72	-	-	-	-	-	-	-
New Bedford	Dartmouth	Faunce Corner Road Widening	245	-	-	-	-	-	-	-	-	-
New Bedford	New Bedford	First Street Overhead Rebuild	-	-	-	-	-	-	-	37	116	22
Plymouth	Wareham	Great Hill Mobile Home Park Underground	45	-	-	-	-	-	-	-	-	-
New Bedford		High Hill Upgrade	-	-	222	-	-	-	-	-	-	-
		Improve Circuit 656 Replace	-	-	-	-	-	-	-	-	178	78
Cape & Vineyard	Falmouth	Install 115KV Breaker and Falmouth	-	108	-	-	-	-	-	-	-	-
Cape & Vineyard	Hatchville	Install 30/40/50 Transformer - Hatchville	110	-	-	-	-	-	-	-	-	-
Cape & Vineyard	Falmouth	Install Conduit Falmouth Bulk	-	1,346	-	-	-	-	-	-	-	-
Cape & Vineyard	Falmouth	Land Purchase at Falmouth	-	92	2	-	-	-	-	-	-	-
Cape & Vineyard	Martha's Vineyard	Martha's Vineyard Distribution	195	660	(45)	-	-	-	-	-	-	-
New Bedford		New Bedford Backyard System Upgrade	(29)	-	-	-	-	-	-	-	-	-
New Bedford		New Bedford City Overhead Rebuild	130	11	170	167	94	31	-	-	-	-
New Bedford		New Bedford Overhead Circuit Upgrade	-	-	-	-	-	-	-	-	87	-
New Bedford		New Bedford Circuit 33 & 3	-	264	22	-	-	-	-	-	-	-
New Bedford		New Bedford Keep Cost	-	-	-	-	-	-	-	-	130	-
New Bedford		New Bedford Remote Control of Tie Line	78	147	143	-	-	-	-	-	-	-
New Bedford		New Bedford Secondary Network Upgrade	-	240	(3)	-	-	-	-	-	-	-
New Bedford		New Bedford Waste Water Treatment	(380)	601	-	-	-	-	-	-	-	-

**Commonwealth Electric Company
2002 SQI Capital Spending**

(Dollars in Thousands)

District	Town	Description	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
New Bedford		New Service Titleist/Footjoy	(7)	-	-	-	-	-	-	-	-	-
Plymouth		Newfield Low Voltage Sub Upgrade	-	128	-	-	-	-	-	-	-	-
		Overhead Circuit Upgrades	-	-	-	-	-	-	-	-	99	323
Cape & Vineyard		Overhead & Conv. Reconductor Circuit 9	109	-	-	-	-	-	-	-	-	-
Cape & Vineyard	Orleans	Orleans Substation 2nd Transformer	-	-	-	219	1,069	1,695	26	-	-	-
	All Areas	OSHA	-	-	-	150	196	194	74	16	56	-
		Construct Phase 2 of the 122 Line Rebuild - Sandwich to Barnstable	-	-	-	-	-	-	-	4,192	(31)	113
Plymouth	Plymouth	Pine Hills Development	-	-	-	-	-	-	-	(171)	(484)	(11)
Plymouth	Plymouth	Plymouth Keep Cost	-	-	-	-	-	-	-	-	105	8
Plymouth		Plymouth Overhead Circuit Up	-	-	-	-	-	-	-	-	30	69
New Bedford		Rebuild 102-8 to New Bedford Water Works	-	-	356	-	-	-	-	-	-	-
New Bedford	New Bedford	Act of Public Authority, Park St - New Bedford	-	-	-	-	-	-	-	74	84	-
Cape & Vineyard		Residential Customer - Cape & Vineyard	-	-	-	-	-	-	-	-	19	47
New Bedford		Residential Customer - New Bedford	-	-	-	-	-	-	-	-	15	41
Plymouth		Residential Customer - Plymouth	-	-	-	-	-	-	-	-	5	21
Plymouth		Rebuild the 127 Line	-	-	(38)	-	-	-	-	-	-	-
		Rebuild 88 Line Horse Pond	-	-	-	-	-	246	1	-	-	-
Plymouth	Plymouth	Rebuild Circuit 14, Plymouth	-	-	-	-	-	-	-	-	428	(315)
Plymouth	Wareham	Rebuild Circuit 84, Agawam	-	-	-	-	-	-	-	-	94	120
New Bedford	Westport	Rebuild Circuit 523 Westport	-	-	-	-	-	-	-	-	112	32
Cape & Vineyard	Waquoit	Rebuild Waquoit 23KV Tap	29	(8)	-	-	-	-	-	-	-	-
New Bedford		Reconductor Circuit 532 Cross Rd	2	-	-	-	-	-	-	-	-	-
Cape & Vineyard		Reconductor Commercial Street	32	308	503	-	-	-	-	-	-	-
New Bedford	Freetown	Reconductor Circuit 604 Feed Relocation	-	-	-	-	-	-	-	287	28	-
Cape & Vineyard	Osterville	Reconductor Circuit 892, Osterville	-	-	-	-	-	-	-	-	259	-
Plymouth	Plymouth	Reconductor Circuit #968-Plymouth	-	231	(6)	-	-	-	-	-	-	-
Cape & Vineyard		Reconductor State Road	36	-	-	-	-	-	-	-	-	-
Plymouth		Relocate 17 Line (MBTA)	-	-	213	(214)	196	-	-	-	-	-
Cape & Vineyard	Martha's Vineyard	Replace Martha's Vineyard Cable	-	-	-	181	-	-	-	-	-	-
New Bedford		Seacoast Shore Conversion	-	69	(8)	201	-	-	-	-	-	-
Cape & Vineyard	Yarmouth	South Yarmouth 2	-	-	-	-	-	-	-	6	3	-
Cape & Vineyard	Yarmouth	South Yarmouth Conversion	-	-	-	11	-	-	-	-	-	-
Cape & Vineyard		Street Light Customer Operations - Cape & Vineyard	-	-	-	-	-	-	-	-	62	67
New Bedford		Street Light Customer Operations - New Bedford	-	-	-	-	-	-	-	-	52	34
Plymouth		Street Light Customer Operations - Plymouth	-	-	-	-	-	-	-	-	27	47
Cape & Vineyard		Upper Cape Water Supply	-	-	-	-	-	-	-	-	136	-
Cape & Vineyard	Cummaquid	Underground Residential Development Rebuild Cummaquid	-	-	-	-	-	-	-	-	120	-
Cape & Vineyard		Underground Residential Development Rebuild Santuit Pond	-	-	-	-	-	-	-	-	221	13
Cape & Vineyard		Underground Residential Development Reconductor Artisan Way	57	7	-	-	-	-	-	-	-	-
Cape & Vineyard		Underground Residential Development Reconductor Bramblebush	-	53	-	-	-	-	-	-	-	-
Cape & Vineyard		Underground Residential Development Reconductor Cinderella Terrace	-	95	-	-	-	-	-	-	-	-
Cape & Vineyard		Underground Residential Development Reconductoring New Seabury	41	-	-	-	-	-	-	-	-	-
Cape & Vineyard		Underground Residential Development Reconductor-Sand/Dee	70	-	-	-	-	-	-	-	-	-
Cape & Vineyard		Underground Residential Development Reconductor-Sandwich/Country	49	-	-	-	-	-	-	-	-	-
Cape & Vineyard		Underground Residential Development Reconductor-Timberland Shore	-	110	-	-	-	-	-	-	-	-
		Y2K Preparation of Substation	-	-	-	-	-	-	298	-	-	-
New Bedford		ZAPP USA	-	-	-	-	-	-	452	-	-	-
Cape/Vineyard	Cape & Vineyard	Overhead Work Order - Cape & Vineyard	-	-	-	-	-	-	-	-	93	-
Cape/Vineyard	Cape & Vineyard	Minor Projects - Cape & Vineyard Areas - Various	-	-	-	-	-	-	-	-	14	1,912
Cape/Vineyard	Cape & Vineyard	Overhead Minor Projects - Cape & Vineyard Areas - Various	-	-	-	-	-	-	-	-	13	1,543
Cape/Vineyard	Cape & Vineyard	Various Projects - Cape & Vineyard Areas	-	-	-	-	-	-	-	-	7	1,380
Cape/Vineyard	Cape & Vineyard	Residential Development/Improvements Cape & Vineyard	-	-	-	-	-	-	-	-	2	54
Cape/Vineyard	Cape & Vineyard	New Overhead and Underground Services - Cape & Vineyard	-	-	-	-	-	-	-	-	7	411
Cape/Vineyard	Cape & Vineyard	Residential Development - Cape & Vineyard	-	-	-	-	-	-	-	-	1	391
New Bedford	Dartmouth	Residential Service - Dartmouth - Old Westport Rd	-	-	-	-	-	-	-	-	1	103
New Bedford	Dartmouth	Overhead Service - Dartmouth - Bakerville Rd	-	-	-	-	-	-	-	-	1	(79)
Cape/Vineyard	Falmouth	Act of Public Authority - Falmouth Beautification Project - Main St	-	-	-	-	-	-	-	-	3	-
Cape/Vineyard	Hyannis	Overhead Relay Enhancement - Reconfigure 514 Circuit	-	-	-	-	-	-	-	-	3	2
Cape/Vineyard	Hyannis	Act of Public Authority - Hyannis Transportation Center	-	-	-	-	-	-	-	-	4	-
New Bedford	New Bedford	Keep Cost Overhead New Bedford Areas - Various	-	-	-	-	-	-	-	-	3	(117)
New Bedford	New Bedford	Minor Projects - New Bedford Areas	-	-	-	-	-	-	-	-	1	-
New Bedford	New Bedford	Improve New Bedford Area - Various	-	-	-	-	-	-	-	-	5	231
Various - South	New Bedford	Engineering Special - New Bedford Area - Various	-	-	-	-	-	-	-	-	12	168
New Bedford	New Bedford	Overhead Work Order - New Bedford	-	-	-	-	-	-	-	-	4	-

**Commonwealth Electric Company
2002 SQI Capital Spending**

(Dollars in Thousands)

District	Town	Description	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
New Bedford	New Bedford	Various Projects - New Bedford Areas	-	-	-	-	-	-	-	-	26	313
	New Bedford	Improve - New Bedford	-	-	-	-	-	-	-	-	1	(95)
New Bedford	New Bedford	Various Projects - New Bedford Areas	-	-	-	-	-	-	-	-	24	702
New Bedford	New Bedford	Improve - New Bedford	-	-	-	-	-	-	-	-	21	7
New Bedford	New Bedford	Various Projects - New Bedford Areas	-	-	-	-	-	-	-	-	7	1,447
New Bedford	New Bedford	Improve - New Bedford	-	-	-	-	-	-	-	-	6	(18)
New Bedford	New Bedford	New Customer - Underground Service - New Bedford	-	-	-	-	-	-	-	-	2	244
Cape/Vineyard	Osterville	Improvement - Reconductor Circuit 892 - Osterville	-	-	-	-	-	-	-	-	9	-
Plymouth	Plymouth	Improve Industrial Park Circuit #14 Relocation	-	-	-	-	-	-	-	-	12	-
Various	Plymouth	Double End Valley - Distribution Substation - Plymouth	-	-	-	-	-	-	-	-	4	-
Plymouth	Plymouth	Keep Cost Overhead Plymouth - Various	-	-	-	-	-	-	-	-	3	-
Plymouth	Plymouth	Minor Projects - Plymouth Areas	-	-	-	-	-	-	-	-	1	-
Various	Plymouth	Engineering Special - Plymouth OSHA	-	-	-	-	-	-	-	-	12	6
	Plymouth	Overhead Work Order - Plymouth	-	-	-	-	-	-	-	-	51	-
Plymouth	Plymouth	Minor Projects - Plymouth Various Areas	-	-	-	-	-	-	-	-	12	697
Plymouth	Plymouth	Improve - Plymouth	-	-	-	-	-	-	-	-	2	-
Plymouth	Plymouth	Minor Projects - Plymouth Various Areas	-	-	-	-	-	-	-	-	27	553
Plymouth	Plymouth	New Overhead Services - Plymouth Area - Various	-	-	-	-	-	-	-	-	5	223
Plymouth	Wareham	Act of Public Authority - Circuit 84 Water Crossing Rebuild	-	-	-	-	-	-	-	-	79	-
Plymouth	Wareham	Residential Development - Wareham - Off Main St	-	-	-	-	-	-	-	-	1	271
Cape/Vineyard	Yarmouth	Act of Public Authority - Buck Island Road Widening	-	-	-	-	-	-	-	-	2	-
Cape/Vineyard	Yarmouth	Overhead Relay Enhancement - 915 Circuit Conversion	-	-	-	-	-	-	-	-	4	-
Cape/Vineyard	Yarmouth	Keep Cost Overhead Yarmouth - Various	-	-	-	-	-	-	-	-	2	(25)
Plymouth		New Customer	-	-	-	-	-	-	-	-	4	-
Cape/Vineyard		Various Projects	-	-	-	-	-	-	-	-	3	-
Cape/Vineyard	Wellfleet	Extend 25kV Circuit, Wellfleet	-	-	-	-	-	-	-	-	-	173
Plymouth	Marshfield	Circuit 970 Convert to Loop, Marshfield	-	-	-	-	-	-	-	-	-	454
Cape/Vineyard	New Seabury	Underground Real Estate Development Rebuild New Seabury Fiddler	-	-	-	-	-	-	-	-	-	529
		Rebuild and Extend Circuit 124	-	-	-	-	-	-	-	-	-	364
Cape/Vineyard	Falmouth	Ext Ckt 845 Seacoast Shores, FAL	-	-	-	-	-	-	-	-	-	136
		Oak Street Substation	-	-	-	-	-	-	-	-	-	828
Plymouth	Marshfield	Reconductor CKT 42J2 Marshfield	-	-	-	-	-	-	-	-	-	242
Plymouth	Wareham	Recon Ckt 12J1, Swifts Beach, Wareh	-	-	-	-	-	-	-	-	-	188
Plymouth	Plymouth	Replace DB Cable, Woodside Est, Ply	-	-	-	-	-	-	-	-	-	392
Plymouth	Wareham	Replace DB Cable, Great Hill, Wareham	-	-	-	-	-	-	-	-	-	9
Plymouth	Plymouth	Replace DB Cable, Ballam Sites, Ply	-	-	-	-	-	-	-	-	-	105
Plymouth	Plymouth	Replace DB Cable Pine Ridge Est, Ply	-	-	-	-	-	-	-	-	-	33
		Reconductor Circuit 102 Chipawpy/Slades Circuit 605	-	-	-	-	-	-	-	-	-	321
		New tie 891 892 Eel River Rd 4kv	-	-	-	-	-	-	-	-	-	8
Cape/Vineyard	Yarmouth	Reconductor Circuit 562, Yarmouth	-	-	-	-	-	-	-	-	-	4
Cape/Vineyard	Yarmouth	Road widening, Yarmouth	-	-	-	-	-	-	-	-	-	94
Cape/Vineyard	Barnstable	Old Stage Rd, Barnstable	-	-	-	-	-	-	-	-	-	20
Cape/Vineyard	Cotuit	Cotuit Landing, Stop&Shop Plaza	-	-	-	-	-	-	-	-	-	10
		Rebuild Underground Real Estate Development-Lynxholm Trust	-	-	-	-	-	-	-	-	-	145
		Rebuild Underground Real Estate Development-Kings Landing	-	-	-	-	-	-	-	-	-	107
		Rebuild Underground Real Estate Development-Sea Pines	-	-	-	-	-	-	-	-	-	47
Cape/Vineyard		Repl KPF Type Switches - Cape	-	-	-	-	-	-	-	-	-	2
Cape/Vineyard	Falmouth	Reconduct 98 line, Brick Kiln Fal	-	-	-	-	-	-	-	-	-	67
		Split ckt63/convert ckt4/new ckt65	-	-	-	-	-	-	-	-	-	237
		Reconductor/Rebuild Circuit 131	-	-	-	-	-	-	-	-	-	1
		Rearrange ckt181/convert ckt401-402	-	-	-	-	-	-	-	-	-	149
		Repl recloser/controls	-	-	-	-	-	-	-	-	-	75
Cape/Vineyard	Orleans	Transfer load from Orleans Dist	-	-	-	-	-	-	-	-	-	392
New Bedford	New Bedford	NCC New Bedford Waste Disposal	-	-	-	-	-	-	-	-	-	17
		Underground Distribution Equipment Contribution in Aid of Construction credit	-	-	-	-	-	-	-	-	-	(66)
		Technical Support	-	-	-	-	-	-	-	324	3,475	3,930
		Construction Accounting Service	-	-	-	-	-	-	-	112	-	-
		Total Distribution Electric Delivery	\$ 7,596	\$ 22,416	\$ 22,623	\$ 17,324	\$ 19,209	\$ 19,994	\$ 18,595	\$ 17,997	\$ 17,387	\$ 24,902
		109 Line Switch Upgrade	\$ -	\$ -	\$ -	\$ -	\$ 36	\$ 51	\$ -	\$ -	\$ -	\$ -
		111/112 Line	-	-	-	-	-	-	-	174	-	-
New Bedford		112 Pipe Type Cable-Pothead	575	-	-	-	-	-	-	-	-	-
Cape & Vineyard		115 Line Relaying	-	193	167	-	-	-	-	-	-	-

**Commonwealth Electric Company
2002 SQI Capital Spending**

(Dollars in Thousands)

District	Town	Description	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Cape & Vineyard		11572 Circuit Breaker Replacement	-	-	-	150	-	-	-	-	-	-
Plymouth	Carver	116 Line Carver to Brook Street	-	-	-	2,600	-	-	-	-	-	-
Cape & Vineyard		122 Line Rebuild	-	-	-	-	3,062	514	2	29	-	-
		345Kv Breaker Replacement	-	-	-	-	-	-	-	-	2	666
Plymouth		7.3 Miles of 116 Line Semass	3,138	1,209	-	-	-	-	-	-	-	-
Cape & Vineyard	Barnstable	Barnstable 115KV Switch Station	8	-	-	-	-	-	-	-	-	-
Cape & Vineyard	Barnstable	Barnstable Switch Relay Upgrade	-	-	-	-	105	-	-	-	-	-
Cape & Vineyard	Bourne	Bourne 12272 Breaker Replacement	-	-	-	-	-	262	-	-	-	-
Cape & Vineyard		Canal Auto Transformer	-	-	-	-	-	-	-	767	189	-
Cape & Vineyard		Canal Switchyard Separation	-	-	-	-	-	-	110	125	133	61
		Com Electric Spare Breaker	-	-	-	-	-	264	-	-	-	-
Plymouth		Corrective Maintenance - Plymouth/Wareham	-	-	-	-	-	-	-	-	31	18
Cape & Vineyard	Falmouth	Falmouth 23KV Breaker	-	-	-	4	-	-	-	-	-	-
Cape & Vineyard	Falmouth	Falmouth Bulk Substation	116	-	-	-	-	-	-	-	-	-
Cape & Vineyard	Falmouth	Falmouth Tap 115KV Circuit	48	803	188	-	-	-	-	-	-	-
Cape & Vineyard	Harwich	Harwich Tap-Harwich 115KV Line	5	-	-	-	-	-	-	-	-	-
New Bedford		High Hill Upgrade	-	-	-	234	34	6	(315)	-	-	-
Plymouth	Kingston	Install 115KV Breaker and Kingston	100	2	63	-	-	-	-	-	-	-
	All Areas	Minor Projects	-	-	-	-	-	-	18	-	1	-
New Bedford		New Bedford 115Kv Cable	-	-	-	-	-	-	-	1,671	4,647	(511)
New Bedford		New Bedford & Cape 115	-	-	-	-	-	-	-	2	-	-
New Bedford		New Bedford Cable Supply Relocate	-	-	-	-	-	913	1,398	-	-	-
New Bedford		New Bedford Cross Road-Station Replace	-	-	-	-	-	-	-	-	2	304
Cape & Vineyard	Orleans	Orleans 115Kv Breaker	-	-	-	-	-	128	-	-	-	-
Cape & Vineyard	Orleans	Orleans Sub Linework	-	-	-	-	260	-	-	-	-	-
Cape & Vineyard	Orleans	Orleans Sub to Harwich Tap	21	363	2,854	(6)	-	-	-	-	-	-
	All Areas	OSHA	-	-	-	-	-	-	-	101	-	-
		P & I 400MVA Auto-Transformer @ Canal Yard	-	-	-	-	-	-	1,637	-	-	-
Cape & Vineyard	Bourne	Purchase 2 Breakers for Bourne	-	-	-	-	-	169	22	-	-	-
Plymouth	Carver	Rebuild 116 Line/Carver Substation to Bourne	-	(101)	-	-	-	-	-	-	-	-
		Replace 191 Structures & Station	-	-	-	-	-	-	559	49	821	27
Cape & Vineyard	Sandwich	Sandwich Sub T-120-122 Breaker	-	-	-	-	-	90	-	-	-	-
		Station 211 - Install Shunt Reactor	-	-	-	-	-	-	-	-	1	-
Cape & Vineyard		Switch 115KV Capacitor	35	-	-	-	-	-	-	-	-	-
Plymouth		Tremont - 11232 Circuit Breaker Replacement	-	-	-	55	85	-	-	-	-	-
		Upgrade Substations	-	-	-	-	-	-	-	80	110	22
Various - South	New Bedford	OSHA Upgrade	-	-	-	-	-	-	-	-	14	154
New Bedford	New Bedford	New Bedford City Overhead Rebuild	-	-	-	-	-	-	-	-	1	-
		Build 115KV Line Acushnet/Pine St	-	-	-	-	-	-	-	262	-	-
		Replace structures Kingston to Whitman	-	-	-	-	-	-	-	1	-	-
		Technical Support	-	-	-	-	-	-	-	-	232	-
		Oak Street Station 518 Transmission	-	-	-	-	-	-	-	-	-	2
		Add two motor switches Line # 109	-	-	-	-	-	-	-	-	-	58
		Buy and Install 115 Kv Breakers NB	-	-	-	-	-	-	-	-	-	130
		Replace Structures Line # 191	-	-	-	-	-	-	-	-	-	1,346
		Total Transmission	\$ 4,046	\$ 2,469	\$ 3,272	\$ 3,037	\$ 3,582	\$ 2,397	\$ 3,431	\$ 3,261	\$ 6,184	\$ 2,277
Capitalized Overheads:			\$ 10,218	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,308	\$ 5,764	\$ 5,676
		Total Capital Spending *	\$ 22,427	\$ 25,952	\$ 27,019	\$ 21,186	\$ 23,934	\$ 23,310	\$ 23,155	\$ 27,534	\$ 29,726	\$ 33,777
Note:												
* Total Capital Spending for years 1994 through 1999 include both Direct Charges and Indirect Charges by project.												
1994	\$	11,038										
1995	\$	10,810										
1996	\$	9,736										
1997	\$	9,954										
1998	\$	10,439										
1999	\$	8,339										

Commonwealth Electric Company

Spare Component Acquisition & Inventory Policy and Practice

Year Ending December 31, 2002



Appendix 9

Commonwealth Electric Company Spare Parts Policy and Practices
March 1, 2003

Commonwealth Electric Company (“Commonwealth” or the “Company”) monitors and manages critical items for its electric transmission system using a state-of-the-art computerized and integrated work management and inventory-control/procurement system. This new system was installed in 1999-2000, and provides for identification of common items needed for Commonwealth, as well as the operating systems of all of the NSTAR Companies (i.e., Commonwealth, Boston Edison Company, Cambridge Electric Light Company, and NSTAR Gas Company) (together the “NSTAR Companies”). In addition, Commonwealth’s system inventories have been decentralized to bring materials closer to their point of use, decreasing spare-part requirements. Spare part requirements are periodically reviewed and updated by the Company to create efficiencies among and between the NSTAR Companies.

I. Electric Distribution System Spare Parts

The components of Commonwealth’s distribution system are, for the most part, lower-cost and high-use items. Inventory levels are based on predicted numbers of: (1) replacements due to failure; (2) replacements due to wear, tear and obsolescence; and (3) new construction needs. Higher-cost, less-frequent turnover items, such as pad-mount switches, transformers, tapping and stopping equipment and regulators, are inventoried based on the same requirements.

In recent years, The NSTAR Companies have formed alliances with vendors of high-use items such as gas parts, distribution transformers, cable and overhead hardware. These alliances have proven very effective in assuring a continuous flow of high-quality components at a controlled price, as well as giving the NSTAR Companies priority treatment for emergency deliveries to cover natural disasters, which have the potential to drastically impact the system.

II. Electric Transmission and Distribution Substation & Gas Take Station Spare Parts

Components at the substation level are much higher in cost, but much lower in number. The turnover of these components and the parts associated with them is also very low. Historically, there was a substantial inventory of substation spare parts, with very high carrying costs. Based on alternative methods for obtaining replacement parts, spare parts inventories were reviewed by Commonwealth, and as a result, substantially reduced.

Commonwealth has identified the following alternatives to maintaining a substantial inventory of spare parts:

- Establishing relationships with suppliers who maintain inventories of spare parts that can be obtained by Commonwealth on very short notice, as described above.

- Utilizing equipment on the Commonwealth system, which has been recently replaced or upgraded, for use as spare parts. Because of the large number of Commonwealth's ongoing projects, this option would provide a fairly continuous supply of spare parts.
- Maintaining relationships with utilities that utilize similar equipment.
- Employing the use of rebuilding kits.
- Promoting redundancy in design and parallel feeds throughout the Commonwealth system to reduce the need for major component inventories.

For large critical components, dedicated spares are kept and replaced as used by Commonwealth. Specifically, the Company maintains a mobile transformer and mobile substations that can be placed in service in a very short time for emergency replacement of a major component.

Commonwealth Electric Company

Poor Performing Circuits

Year Ending December 31, 2002



Appendix 10

2002 – Poor Performing Circuits

Commonwealth Electric Company					
Circuit ID	Location	Reason(s) for performance	Number of years performed poorly	Steps taken to improve performance	2002 SAIDI
4-77B-452	Mashpee	Several poles struck by autos that caused significant customer outage hours and customers who experienced outages in 2002 - specifically, in February and June 2002.	2	2003 - Circuit is in the reliability plan and will receive a full circuit walkdown and tree trimming. In addition, this plan encompasses the installation of automatic sectionalizing units to improve area reliability for the NSTAR South system.	515.00
3-24-912	Duxbury	Majority of the outages on this circuit for 2002 were tree related events	2	2002 – Tree trimming completed the end of 2002 and substantial clearance was achieved 2003 - Circuit is in the reliability plan and will receive a full circuit walkdown. In addition, this plan encompasses the installation of automatic sectionalizing units to improve area reliability for the NSTAR South system.	721.85
4-96-675	Provincetown, Truro	Majority of outages on this circuit in 2002 were due to overhead equipment failures, primarily failed cutouts and fuses. In addition, there were several tree related outages in early 2002.	2	2002 – Tree trimming completed the end of 2002 2003 - Circuit is in the reliability plan and will receive a full circuit walkdown. In this plan, the fuses and cutouts will be replaced where applicable. In addition, this plan encompasses the installation of automatic sectionalizing units to improve area reliability.	194.10
2-605-605	Assonet	Majority of the outages in 2002 on this circuit were due to lightning storms and snow/ice events that caused faulted overhead equipment.	3	2001 - This circuit received tree trimming in late 2001 2003 - Circuit is in the reliability plan and will receive a full circuit walkdown. In addition, this plan encompasses the installation of automatic sectionalizing units to improve area reliability.	195.99

2002 – Poor Performing Circuits

Commonwealth Electric Company					
Circuit ID	Location	Reason(s) for performance	Number of years performed poorly	Steps taken to improve performance	2002 SAIDI
4-86-840	Falmouth, Bourne	Major driver of SAIDI on this circuit was due to 2 airplane incidents affecting the entire circuit in 2001. In addition, it had an equipment failure event in 2001 affecting the entire circuit. In 2002, this circuit had only two reportable events, one of which was a supply line equipment failure that affected the entire circuit.	2	2003 – Infrared survey planned for this circuit and necessary repairs will be made	189.68
4-89-965	Dennis	Majority of the outages on this circuit in 2002 were driven by tree related events and fuse/cutout equipment failures.	2	2003 - Circuit is in the reliability plan and will receive a full circuit walkdown. The fuses and cutouts will be replaced as part of this plan as necessary. In addition, this plan encompasses the installation of automatic sectionalizing units to improve area reliability. 2003 – Tree trimming completed the end of January on this circuit	241.49
4-87A-475	Sandwich	Majority of the outages on this circuit in 2002 were tree related and overhead equipment failures.	3	2002 – Tree trimmed and a large number of tree removals were completed on this circuit 2003 - Circuit is in the reliability plan and will receive a full circuit walkdown. In addition, this plan encompasses the installation of automatic sectionalizing units to improve area reliability.	396.83
4-93-531	Barnstable	A majority of the outages and customers affected on this circuit in 2002 were due to auto pole struck events – these events affected the customers on the entire circuit	2	2003 – Patrol circuit for possible pole relocations and installation of additional pole reflectors	162.20
4-89-552	Dennis	A majority of the outages in 2002 on this circuit were equipment failure related, specifically, transformers and cutouts.	2	2001 – Tree trimmed late in year 2003 - Circuit is in the reliability plan and will receive a full circuit walkdown. In this plan, the overhead equipment will be inspected and replaced as necessary to improve circuit reliability. In addition, this plan encompasses the installation of automatic sectionalizing units to improve area reliability.	408.69

2002 – Poor Performing Circuits

Commonwealth Electric Company					
Circuit ID	Location	Reason(s) for performance	Number of years performed poorly	Steps taken to improve performance	2002 SAIDI
4-90-541	Yarmouth	The majority of the outages in 2002 on this circuit were tree and squirrel related events.	2	2003 – Tree trimming planned	103.30

Commonwealth Electric Company

Staffing Levels

Year Ending December 31, 2002



Appendix 11

1997 THROUGH 2002

STAFFING - TRANSMISSION AND DISTRIBUTION OPERATIONS

	1997	1998	1999	2000	2001	2002
Commonwealth Electric Company						
Union	477	487	489			
Management	250	216	184			
NSTAR Electric & Gas						
Union				2,264	2,272	2,324
Management				919	914	889

Note 1: From 1998 to 1999 and 1999 to 2000 the Company offered a voluntary separation program offered as part of the merger with Commonwealth Energy System. During the period from August 1999 through August 2000, 635 employees from the Boston Edison and Commonwealth Energy System elected to participate in this program and exited the merged company. This was a program that was negotiated with the union leadership. Under the program, approximately 300 union and 335 management employees terminated their employment.

Note 2: Certain impacts on staffing levels are the result of union consolidation.

Note 3: With the merger of BEC Energy and Commonwealth Energy System into NSTAR Electric and Gas and resulting consolidation of operations, employees are no longer categorized by or assigned to positions on the basis of the pre-merger operating company designations.

Commonwealth Electric Company

2003

Performance Benchmarks

Year Ending December 31, 2002



Appendix 12

Commonwealth Electric Company
2003
Performance Benchmarks

<u>Year</u>	<u>Percent Calls Answered (1)</u>	<u>Percent Service Appt. Met</u>	<u>Percent On-Cycle Meter Reads</u>	<u>Lost Work Day Accidents</u>	<u>SAIDI (2)</u>	<u>SAIFI (2)</u>	<u>Consumer Division Cases</u>	<u>Billing Adjustments</u>
1992				2.17			1.501	124.81
1993				3.58			1.450	35.21
1994				3.84			1.240	27.25
1995				2.81			1.191	18.91
1996				3.24			1.019	14.78
1997	66.17%		96.90%	2.35	149.28	1.413	0.972	93.94
1998	64.26%		98.95%	1.43	98.91	0.985	1.050	37.87
1999	61.55%		99.08%	2.89	154.32	1.501	1.003	11.78
2000	71.16%		99.37%	2.49	147.23	1.510	0.792	0.11
2001	60.26%		98.99%	1.54	99.52	1.207	0.944	8.00
2002	80.24%	100.00%	99.38%					
Mean	67.27%		98.78%	2.63	129.85	1.323	1.116	37.27
Std. Dev.	7.42%		0.94%	0.80	28.09	0.225	0.227	40.43
Max. Penalty	52.43%		96.90%	4.24	186.03	1.773	1.570	118.12
25% Penalty	59.85%		97.84%	3.44	157.94	1.548	1.343	77.69
25% Offset	74.70%		99.72%	1.83	101.76	1.098	0.889	-3.16
Max. Offset	82.12%		100.66%	1.03	73.68	0.873	0.663	-43.59

Notes (1) Based on 30 second threshold; includes calls abandoned after threshold;

(2) Exclusions based on events affecting 15% of Company.